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Yoshihisa Minato

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EXAMINER

STRIEB, MICHAEL A

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,392	Applicant(s) MINATO ET AL.	
	Examiner MICHAEL A. STRIEB	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) 5,7,10,23,25-32,35-38 and 41-44 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21,22 and 34 is/are allowed.
- 6) ☒ Claim(s) 1-4,6,8,9,11-20,24,33,39 and 40 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/31/2006, 12/7/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Species I (claims 1-4, 6, 8-9, 11-22, 24, 33-34, and 39-40) in the reply filed on 2/19/2008 is acknowledged. Claims 5, 7, 10, 23, 25-32, 35-38, and 41-44 are hereby withdrawn from prosecution.

Claim Objections

2. Claim 21 objected to because of the following informalities: the word "exposure" is printed twice in succession. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 4/1, 4/2, 6/4/1, 6/4/2, 8-9, and 12 are rejected under 35

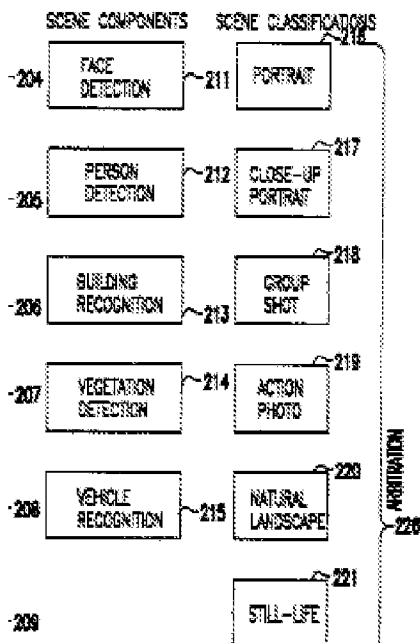
U.S.C. 102(b) as being anticipated by Bolle et al (US 6,301,440 B1).

Regarding **claim 1**, Bolle et al disclose an object determining device comprising a face detecting part for detecting, from an image based on arbitrary focal point information as an image to be processed, a face of a person based on a relative value of statistics in a plurality of characteristic regions produced by contour or parts of a face of a person from the image to be processed (column 4, lines 17-25; Figure 2); and a

Comment [U1]: I don't particularly like this way of formatting claims, e.g. 4/1, 4/2, 6/4/1, etc. I know what you're doing but it is not generally accepted. Please change all references to the claims to normal formatting. In addition, it might be helpful to insert a couple of pictures from Bolle et al. to further enhance your rejection.

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determining part for determining a subject to be focused and/or subject on which to perform exposure control when performing imaging based on the face detected by the face detecting part (column 5, lines 28-31, 45-49; Figure 2).



Regarding **claim 2**, Bolle et al disclose an object determining device comprising a frame acquiring part for acquiring an image of a predetermined frame as an image to be processed from a time-series image including a plurality of frames imaged based on arbitrary focal point information (column 6, lines 43-45; column 7, lines 1-9); a face detecting part for detecting a face of a person based on a relative value of statistics in a plurality of characteristic regions produced by contour or parts of a face of a person from the image to be processed (column 4, lines 17-25; Figure 2); and a determining part for determining a subject to be focused and/or subject on which to perform

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exposure control when performing imaging based on the face detected by the face detecting part (column 5, lines 28-31, 45-49; Figure 2).

Regarding **claim 4/1**, Bolle et al disclose all of the limitations as applied to claim 1 above.

Further, Bolle et al disclose wherein when a plurality of faces are detected by the face detecting part, the determining part determines one face based on image information of each of the plurality of faces, and determines the subject to be focused and/or subject on which to perform exposure control based on the face (column 4, lines 26-44; column 7, lines 20-26).

Regarding **claim 4/2**, Bolle et al disclose all of the limitations as applied to claim 2 above.

Further, Bolle et al disclose the claimed invention in the same manner as applied to claim 4/1 above.

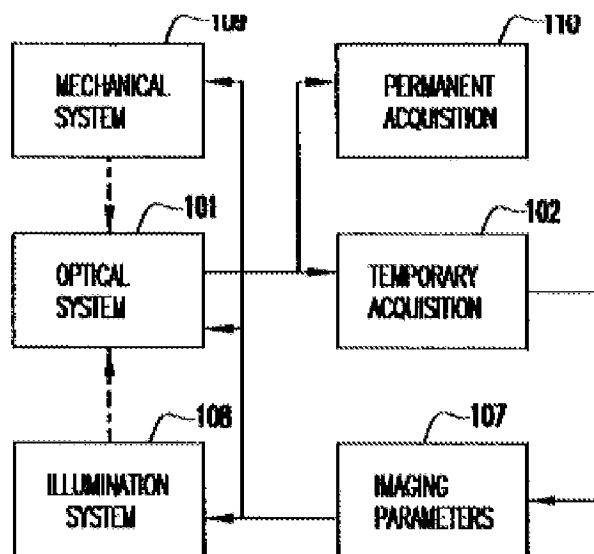
Regarding **claim 6/4/1**, Bolle et al disclose all of the limitations as applied to claim 4/1 above.

Further, Bolle et al disclose wherein the determining part calculates points based on at least one of orientation of the face, size of the face, position in the image, or density of the neighboring faces, and uses the calculated points as the image information (column 4, lines 20-25; column 5, lines 28-31).

Regarding **claim 6/4/2**, Bolle et al disclose all of the limitations as applied to claim 4/2 above.

Further, Bolle et al disclose the claimed invention in the same manner as applied to claim 6/4/1 above.

Regarding **claim 8**, Bolle et al disclose an imaging apparatus comprising an imaging section for imaging an image based on a predetermined focal point information or focal point information and/or exposure control information acquired by an information acquiring section (column 3, lines 14-19, 27-32; column 5, lines 28-31); a face detecting part for detecting a face of a person based on a relative value of statistics in a plurality of characteristic regions produced by contour or parts of a face of a person from an image imaged by the imaging section based on the predetermined focal point information and/or exposure control information acquired by an information acquiring section (column 4, lines 17-24; Figure 2); a determining part for determining a subject to be focused and/or subject on which to perform exposure control when performing imaging based on the face detected by the face detecting part (column 5, lines 28-31, 45-49); an information acquiring section for acquiring focal point information for focusing on a subject determined by the determining part and/or exposure control information for performing exposure control on a subject determined by the determining part (column 7, lines 36-42); and an image storing section for storing an image imaged by the imaging section based on the focal point information and/or exposure control information acquired by the information acquiring section (column 3, lines 27-32; column 8, lines 1-3; Figure 1).



Regarding **claim 9**, Bolle et al disclose an imaging apparatus comprising an imaging section for imaging a time-series image including a plurality of frames based on a predetermined focal point information or focal point information and/or exposure control information acquired by an information acquiring section (column 6, lines 43-45; column 7, lines 1-9); a frame acquiring section for acquiring an image of a predetermined frame from the time-series image including a plurality of frames imaged by the imaging section (column 6, lines 43-45; column 7, lines 1-9); a face detecting part for detecting a face of a person based on a relative value of statistics in a plurality of characteristic regions produced by contour or parts of a face of a person from the image acquired by the frame acquiring section (column 4, lines 17-21; Figure 2); an information acquiring section for acquiring focal point information for focusing on a subject determined by the determining part and/or exposure control information for

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performing exposure control on a subject determined by the determining part (column 7, line 36-42); and an image storing section for storing the time-series image imaged by the imaging section based on the focal point information and/or exposure control information acquired by the information acquiring section (column 3, lines 27-32; column 8, lines 1-3).

Regarding **claim 12**, Bolle et al disclose a computer readable medium containing a program for an information processing device (column 3, lines 29-30; column 4, lines 38-44), said program when executed by the processing device causes the processing device to perform a method comprising the steps of detecting, with an image imaged based on arbitrary focal point information as an image to be processed, a face of a person based on a relative value of statistics in a plurality of characteristic regions produced by contour or parts of a face of a person from the image to be processed (column 4, lines 17-24); and determining a subject to be focused and/or subject on which to perform exposure control when performing imaging based on the detected face (column 5, lines 28-31, 45-49).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3/1 and 3/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle et al in view of Yamada et al (US 2001/0036298 A1).

Regarding **claim 3/1**, Bolle et al disclose all of the limitations as applied to claim 1 above.

Bolle et al do not disclose wherein the face detecting part derives the relative value of the statistics of a first region and a second region which are characteristic regions within an emphasis region in the image to be processed, and detects a face of a person by deciding whether or not a face of a person is included in the emphasis region based on the relative value of the statistics.

Yamada et al disclose wherein the face detecting part derives the relative value of the statistics of a first region and a second region which are characteristic regions within an emphasis region in the image to be processed, and detects a face of a person by deciding whether or not a face of a person is included in the emphasis region based on the relative value of the statistics (paragraphs 9-10; Figure 2).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Yamada et al with Bolle et al. The motivation would have been to provide a well known method of face detection for purposes of determining a focus location.

Therefore, it would have been obvious to combine Yamada et al with Bolle et al to obtain the invention as disclosed in claim 3/1.

Regarding **claim 3/2**, Bolle et al disclose all of the limitations as applied to claim 2 above.

Further, Bolle et al in combination with Yamada et al disclose the claimed invention in the same manner as applied to claim 3/1 above.

7. Claims 11/8 and 11/9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle et al in view of Ray et al (US 6,940,545 B1).

Regarding **claim 11/8**, Bolle et al disclose all of the limitations as applied to claim 8 above.

Bolle et al do not disclose a displaying section for displaying the face of a person determined by the determining part distinctly from other faces.

Ray et al disclose a displaying section for displaying the face of a person determined by the determining part distinctly from other faces (column 5, lines 42-52).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Ray et al with Bolle et al. The motivation would have been to identify to the user which face is being focused upon.

Therefore, it would have been obvious to combine Ray et al with Bolle et al to obtain the invention as disclosed in claim 11/8.

Regarding **claim 11/9**, Bolle et al disclose all of the limitations as applied to claim 9 above.

Further, Bolle et al in combination with Ray et al disclose the claimed invention in the same manner as applied to claim 11/8 above.

8. Claims 13-14, 33, 39/1 and 39/2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle et al in view of Sannoh et al (US 2003/0071708 A1).

Regarding **claim 13**, Bolle et al disclose an object determining device comprising a detecting part for detecting a face of a person from an input image (column 4, lines 26-44).

Bolle et al do not disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face to be focused and/or subject on which to perform exposure control when performing imaging from the plurality of faces of people based on positions of the plurality of faces of people.

Sannoh et al disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face to be focused and/or subject on which to perform exposure control when performing imaging from the plurality of faces of people based on positions of the plurality of faces of people (paragraphs 105 and 117).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Sannoh et al with Bolle et al. The motivation would have been to expand the functionality of the device to provide for a plurality of faces and to provide an optimal focused image.

Therefore, it would have been obvious to combine Sannoh et al with Bolle et al to obtain the invention as disclosed in claim 13.

Regarding **claim 14**, Bolle et al disclose an object determining device comprising a frame acquiring section for acquiring an image of a predetermined frame as an image

to be processed from an input time-series image including a plurality of frames (column 6, lines 43-45; column 7, lines 1-9); and a detecting part for detecting a face of a person from the image to be processed (column 4, lines 17-24).

Bolle et al do not disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face to be focused and/or subject on which to perform exposure control when performing imaging from the plurality of faces of people based on positions of the plurality of faces of people.

Sannoh et al disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face to be focused and/or subject on which to perform exposure control when performing imaging from the plurality of faces of people based on positions of the plurality of faces of people (paragraphs 105 and 117).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Sannoh et al with Bolle et al. The motivation would have been to expand the functionality of the device to provide for a plurality of faces and to provide an optimal focused image.

Therefore, it would have been obvious to combine Sannoh et al with Bolle et al to obtain the invention as disclosed in claim 14.

Regarding **claim 33**, Bolle et al disclose a computer readable medium containing a program for an information processing device (column 3, lines 29-30; column 4, lines 38-44), said program when executed by the processing device causes the processing

device to perform a method comprising the steps of detecting a face of a person from an input image (column 4, lines 26-44).

Bolle et al do not disclose determining, when a plurality of faces of people are detected, a face to be focused and/or face on which to perform exposure control when performing imaging from a plurality of faces of people based on positions of the plurality of faces of people.

Sannoh et al disclose determining, when a plurality of faces of people are detected, a face to be focused and/or face on which to perform exposure control when performing imaging from a plurality of faces of people based on positions of the plurality of faces of people.

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Sannoh et al with Bolle et al. The motivation would have been to expand the functionality of the device to provide for a plurality of faces and to provide an optimal focused image.

Therefore, it would have been obvious to combine Sannoh et al with Bolle et al to obtain the invention as disclosed in claim 33.

Regarding **claim 39/1**, Bolle et al disclose all of the limitations as applied to claim 1 above.

Bolle et al do not disclose wherein when a plurality of faces of people are detected by the face detecting part, the determining part determines the face to be focused and/or face on which to perform exposure control when performing imaging

from the plurality of faces of people based on positions of the plurality of faces of people.

Sannoh et al disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face to be focused and/or subject on which to perform exposure control when performing imaging from the plurality of faces of people based on positions of the plurality of faces of people (paragraphs 105 and 117).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Sannoh et al with Bolle et al. The motivation would have been to expand the functionality of the device to provide for a plurality of faces and to provide an optimal focused image.

Therefore, it would have been obvious to combine Sannoh et al with Bolle et al to obtain the invention as disclosed in claim 39/1.

Regarding **claim 39/2**, Bolle et al disclose all of the limitations as applied to claim 2 above.

Further, Bolle et al in combination with Sannoh et al disclose the claimed invention in the same manner as applied to claim 39/2 above.

9. Claims 24/13 and 24/14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bolle et al in view of Sannoh et al and in further view of Ray et al.

Regarding **claim 24/13**, Bolle et al in combination with Sannoh et al disclose all of the limitations as applied to claim 13 above.

Bolle et al in combination with Sannoh et al do not disclose a displaying section for displaying the face of a person determined by the determining part distinctly from other faces.

Ray et al disclose a displaying section for displaying the face of a person determined by the determining part distinctly from other faces (column 5, lines 42-52).

At the time of the invention, it would have been obvious to a person having ordinary skill in the art to combine Ray et al with Bolle et al and Sannoh et al. The motivation would have been to identify to the user which face is being focused upon.

Therefore, it would have been obvious to combine Ray et al with Bolle et al and Sannoh et al to obtain the invention as disclosed in claim 24/13.

Regarding **claim 24/14**, Bolle et al in combination with Sannoh et al disclose all of the limitations as applied to claim 14 above.

Further, Bolle et al in combination with Sannoh et al and Ray et al disclose the claimed invention in the same manner as applied to claim 24/13 above.

Allowable Subject Matter

10. Claims 15/13, 15/14, 16-19 and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding **claim 15/13 and subsequent dependent claims**, Bolle et al in combination with Sannoh et al disclose all of the limitations as applied to claim 13 above.

Bolle et al in combination with Sannoh et al do not disclose a center determining portion for determining a center of the positions of the plurality of faces based on the positions of faces of people and a face determining portion for determining a target face based on the position of the center. In fact, Sannoh et al disclose a center determining portion (paragraphs 105 and 117), but it determines the face near the center of the image, rather than the center of the plurality of faces.

Regarding **claim 15/14 and subsequent dependent claims**, Bolle et al in combination with Sannoh et al disclose all of the limitations as applied to claim 14 above.

A similar analysis may be made as applied to claim 15/13 and subsequent dependent claims, above.

Regarding **claim 40/1**, Bolle et al disclose all of the limitations as applied to claim 1 above.

Sannoh et al disclose wherein when a plurality of faces of people are detected by the face detecting part, the determining part determines a face of a person positioned in the middle, with the number of detected faces as a reference, as the face to be focused and/or face on which to perform exposure control when performing imaging (paragraphs 105 and 117).

However, Sannoh et al do not disclose wherein the face to be focused and/or subject on which to perform exposure control is determined with the number of detected faces as a reference.

Regarding **claim 40/2**, Bolle et al disclose all of the limitations as applied to claim 2 above.

A similar analysis may be made as applied to claim 40/1 above.

11. Claims 21-22 and subsequent dependant claims, and 34 are allowed.

Regarding **claim 21 and subsequent dependent claims**, Sannoh et al disclose an object determining device comprising a detecting part for detecting a face of a person from an input image and a determining part for determining, when a plurality of faces of people are detected by the detecting section, a face of a person positioned in the middle as a face to be focused and/or subject on which to perform exposure control when performing imaging (paragraphs 105 and 117).

However, Sannoh et al do not disclose wherein the face to be focused and/or subject on which to perform exposure control is determined with the number of detected faces as a reference.

Regarding **claim 22 and subsequent dependent claims**, Bolle et al disclose an object determining device comprising a frame acquiring section for acquiring an image of a predetermined frame as an image to be processed from an input time-series image including a plurality of frames (column 6, lines 43-45; column 7, lines 1-9) and a detecting part for detecting a face of a person from the image to be processed (column 4, lines 17-24).

Sannoh et al disclose a determining part for determining, when a plurality of faces of people are detected by the detecting part, a face of a person positioned in the

middle as the face to be focused and/or face on which to perform exposure control when performing imaging.

However, the prior art does not disclose wherein said face is to be focused and/or face on which to perform exposure control when performing imaging is determined with the number of detected faces as a reference.

Regarding **claim 34**, B Bolle et al disclose a computer readable medium containing a program for an information processing device (column 3, lines 29-30; column 4, lines 38-44), said program when executed by the processing device causes the processing device to perform a method comprising the steps of detecting a face of a person from an input image (column 4, lines 26-44).

Sannoh et al disclose determining, when a plurality of faces of people are detected, a face of a person positioned in the middle as a face to be focused and/or face on which to perform exposure control when performing imaging (paragraph 105 and 117).

However, the prior art does not disclose wherein said face is to be focused and/or face on which to perform exposure control when performing imaging is determined with the number of detected faces as a reference.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Ishii et al (US 5,410,225) "Video camera and camera system employing aperture control"

Lin (US 6,108,437) "Face recognition apparatus method, system and computer readable medium thereof"

Kresch (US 6,463,163 B1) "System and method for face detection using candidate image region selection"

Velazquez et al (US 2003/0161506 A1) "Face detection computer program product for redeye correction"

Ikeda (US 2006/0284991 A1) "Image sensing apparatus and image processing method"

13. Any response to this office action should be faxed to (571) 273-8300 or mailed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand - delivered responses should be brought to:

Customer Service Window
Randolph Building
401 Dulany Street

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL A. STRIEB whose telephone number is (571)270-3528. The examiner can normally be reached on Monday-Friday 8am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAS

/Patrick J Assouad/
Supervisory Patent Examiner, Art Unit 2862